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EXAMINER
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HENRY, MARIEGEORGES A

ART UNIT	PAPER NUMBER
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2155

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/803,772	<b>Applicant(s)</b> PITHAWALA ET AL.	
	<b>Examiner</b> MARIE GEORGES HENRY	<b>Art Unit</b> 2155	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This is in response to the application filed on 3/12/ 2004. Claims 1-41 are pending.

Claims 1-41 are directed to method and apparatus providing device-initiated network management.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

### **Claim Rejections - 35 USC § 102**

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2155

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Porras et al. (US 6,321,338 B1).

Porras discloses the invention as claimed including method and apparatus providing device-initiated network management.

Regarding claim 1, Porras discloses a method of managing a network entity that is initiated by the network entity, the method comprising the computer-implemented steps performed at the network entity of: monitoring the network entity (Porras, column 6, lines 12-14, the health and status of the network from the perspective of connectivity and throughput are disclosed );

periodically evaluating one or more specified conditions at the managed network entity (Porras, column 6 , lines 12-17, the continuous measuring of the traffic volume detects an abnormal loss in the data rate );

when one or more of the specified conditions are satisfied, then gathering specified information from the managed network entity (Porras, column 6 , lines 17-20, a sudden

Art Unit: 2155

drop can be specific both to the network entity being monitor) , preparing a message that includes the specified information and the specified conditions that were satisfied (Porras, column 6 , lines 23-25, intensity measures are particular suited for detecting flooding attacks, while also providing inside into other anomalies ), and sending the message to a management point (Porras, column 6, lines 40-46, a monitor receives report from other monitors that are performing measures ).

Regarding claim 2, Porras discloses a method of managing a network entity that is initiated by the network entity, the method comprising the computer-implemented steps of: receiving a request from a management application for interaction with the managed network entity (Porras, column 3 , lines 19-21, network services provide an interface for requests internal and external to the domain);

creating a management request that includes a network element identifier; storing a management request in a management proxy while awaiting a poll for the management request from the managed network entity (Porras, column8 , lines 32-39, column 3, lines 43-45, a resolver is handling all incoming request by subscribers whose identities appear in the monitor; the network entity is a proxy server );

receiving a periodic poll message from the managed network entity, wherein the poll message requests any available management requests applicable to the managed network entity (Porras, column 8, lines 14-16, the analysis engines receive large volume

of events that are feed to the resolver );

selecting one or more management requests that match the managed network entity;  
and delivering the selected one or more management requests to the managed network entity (Porras, column 8 , lines 34-39, a resolver handles requests and acts as an interface that disseminates requests ).

Regarding claim 3, Porras discloses a method as recited in Claim 2, further comprising the steps of: receiving a responsive management message from the managed network entity (Porras, column 4 , lines 55-56, the resolver implements a response policy );

storing the responsive management message in the management proxy (Porras, column 7, lines 43-45, column 3, lines 43-45, a signature engine records the occurrence of specific events; the network entity is a proxy server );

receiving a second poll message from the management application, wherein the second poll message requests any responsive management messages applicable to the management application (Porras, column 7 , lines 32-36, a response from the monitor is warranted from activities standing alone or known attacks against the system);

selecting one or more responsive management messages that match the management

Art Unit: 2155

application (Porras, column 5, lines 21-22, a selection implements packets targeting particular network services or applications );

and delivering the selected one or more responsive management messages to the management application (Porras, column 5, lines 15-20, based on packet sources addresses, applications are selected and implemented).

Regarding claim 4, Porras discloses a method as recited in any of Claims 1 or 2, wherein the network entity is within a private network that is managed by a network service provider, and wherein the management point is within a public network that is owned or operated by the network service provider (Porras, column 3, lines 43-46, a virtual private network using the Internet is disclosed).

Regarding claim 5, a method as recited in any of Claims 1 or 2, wherein the network entity is a service appliance (Porras, column 3, lines 43-45, routers, firewall, and proxy servers are described as network entities).

Regarding claim 6, Porras discloses a method as recited in any of Claims 1 or 2, wherein the network entity is a switch or router (Porras, column 3, lines 44-45, a router is disclosed as a network entity).

Regarding claim 7, Porras discloses a system for managing a network entity,

Art Unit: 2155

comprising: one or more management applications hosted in a service provider network (Porras, column 3, lines 43-47, routers, firewall, and proxy servers ,network entities, are parts of a virtual private network);

a management communication program that is and communicatively coupled to the management applications, and comprising one or more sequences of instructions which, when executed by the network entity, causes the network entity to perform the steps of: monitoring the network entity (Porras, column 6, lines 12-14, the health and status of the network from the perspective of connectivity and throughput are disclosed );

periodically evaluating one or more specified conditions at the network entity; when one or more of the specified conditions are satisfied (Porras, column 6 , lines 12-17, the continuous measuring of the traffic volume detects an abnormal loss in the data rate ),

then gathering specified information from the network entity (Porras, column 6 , lines 17-20, a sudden drop can be specific both to the network entity being monitor) , preparing a message that includes the specified information and the specified conditions that were satisfied (Porras, column 6 , lines 23-25, intensity measures are particular suited for detecting flooding attacks, while also providing inside into other anomalies ), and sending the message to the management applications (Porras,



Art Unit: 2155

column 6, lines 40-46, a monitor receives report from other monitors that are performing measures ).

Regarding claim 8, Porras discloses a system as recited in Claim 7, further comprising a management communication transport element hosted in the private network, and wherein the step of sending the message to the management applications comprises the step of sending the message to the management applications using the management communication transport element (Porras, column 3, lines 43-45, TCP/IP, network entity, handles network packets).

Regarding claim 9, Porras discloses a system as recited in Claim 8, wherein the management communication transport element is hosted at the network entity (Porras, column 3, lines 43-45, TCP/IP, network entity, handles network packets).

Regarding claim 10, Porras discloses a system as recited in Claim 8, wherein the management communication transport element is hosted at a proxy server in the private network and accessible to the network entity (Porras, column 8, lines 32-39, column 3, lines 43-45, a resolver is handling all incoming request by subscribers whose identities appear in the monitor; the network entity is a proxy server).

Regarding claim 11, Porras discloses a system for managing a network entity comprising: a management proxy hosted in a service provider network (Porras, column

Art Unit: 2155

3, lines 43-47, proxy servers ,network entities, are parts of a virtual private network);

a management communication transport hosted at the network element and communicatively coupled to the management proxy, and comprising one or more sequences of instructions which, when executed by the network entity (Porras, column 3, lines 47-51, encryption and other security mechanisms ensure the security of the network access via network entities),

causes the network entity to perform the steps of: receiving a request from a management application for interaction with the managed network entity (Porras, column 3 , lines 19-21, network services provide an interface for requests internal and external to the domain);

creating a management request that includes a network element identifier (Porras, column8 , lines 32-39, a resolver is handling all incoming requests by subscribers whose identities appear in the monitor);

storing a management request in the management proxy while awaiting a poll for the management request from the managed network entity (Porras, column7, lines 43-45, column 3, lines 43-45, a signature engine records the occurrence of specific events; the network entity is a proxy server );

Art Unit: 2155

receiving a periodic poll message from the managed network entity, wherein the poll message requests any available management requests applicable to the managed network entity (Porras, column 8, lines 14-16, the analysis engines receive a large volume of events that are feed to the resolver );

selecting one or more management requests that match the managed network entity (Porras, column 8 , lines 34-39, a resolver handles requests and acts as an interface that disseminates requests );

and delivering the selected one or more management requests to the managed network entity (Porras, column 5 , lines 15-20, based on packet sources addresses, applications are selected and implemented).

Regarding claim 12, Porras discloses a system as recited in Claim 11, wherein the instructions further comprise sequences of instructions for performing the steps of: receiving a responsive management message from the managed network entity (Porras, column 4 , lines 55-56, the resolver implements a response policy );

storing the responsive management message in the management proxy (Porras, column 7, lines 43-45, column 3, lines 43-45, a signature engine records the occurrence of specific events; the network entity is a proxy server );

Art Unit: 2155

receiving a second poll message from the management application, wherein the second poll message requests any responsive management messages applicable to the management application (Porras, column 7, lines 43-45, column 3, lines 43-45, a signature engine records the occurrence of specific events; the network entity is a proxy server );

selecting one or more responsive management messages that match the management application (Porras, column 5, lines 21-22, a selection implements packets targeting particular network service or application );

and delivering the selected one or more responsive management messages to the management application (Porras, column 5, lines 15-20, based on packet sources addresses, applications are selected and implemented).

Regarding claim 13, Porras discloses a system as recited in Claim 11, wherein the management proxy is hosted at the network entity (Porras, column 3, lines 43-47, routers, firewall, and proxy servers ,network entities, are parts of a virtual private network).

Regarding claim 14, a system as recited in Claim 11, wherein the management proxy is hosted at a proxy server in the private network and accessible to the network entity (Porras, column 8, lines 32-39, column 3, lines 43-45, a resolver is handling all incoming

Art Unit: 2155

requests by subscribers whose identities appear in the monitor; the network entity is a proxy server).

Regarding claim 15, Porras discloses a system as recited in any of Claims 7 or 11, wherein the network entity is within a private network that is managed by a network service provider, and wherein the management point is within a public network that is owned or operated by the network service provider (Porras, column 3, lines 43-46, a virtual private network using the Internet is disclosed).

Regarding claim 16, Porras discloses a system as recited in any of Claims 7 or 11, wherein the network entity is a service appliance (Porras, column 3, lines 43-45, routers, firewall, and proxy servers are described as network entities).

Regarding claim 17, Porras discloses a system as recited in any of Claims 7 or 11, wherein the network entity is a switch or router (Porras, column 3, lines 44-45, a router is disclosed as a network entity).

Regarding claim 18, Porras discloses A computer-readable medium carrying one or more sequences of instructions for managing a network entity through initiation by the network entity, which instructions, when executed by one or more processors, cause the one or more processors to carry out the steps of any of Claims 1, 2, or 3 (Porras,

Art Unit: 2155

column 3, lines 47-51, encryptions and other security mechanisms ensure the security of the network access via network entities).

Regarding claim 19, Porras discloses a computer-readable medium as recited in Claim 18, wherein the network entity is 2 within a private network that is managed by a network service provider, and wherein the management point is within a public network that is owned or operated by the network service provider (Porras, column 3, lines 43-46, a virtual private network using the Internet is disclosed).

Regarding claim 20, Porras discloses a computer-readable medium as recited in Claim 18, wherein the network entity is a service appliance (Porras, column 5, lines 21-22, a selection implements packets targeting particular network service or application).

Regarding claim 21, Porras discloses a computer-readable medium as recited in Claim 18, wherein the network entity is a switch or router (Porras, column 3, lines 44-45, a router is disclosed as a network entity).

Regarding claim 22, Porras discloses an apparatus for managing a network entity that is initiated by the network entity, comprising: means for monitoring the network entity (Porras, column 3, lines 41-45, services monitors provide local real time analysis of network packets handled by network entities );

means for periodically evaluating one or more specified conditions at the managed network entity (Porras, column 6 , lines 12-17, the continuous measuring of the traffic volume detects an abnormal loss in the data rate );

means for gathering, when one or more of the specified conditions are satisfied (Porras, column 6 , lines 17-20, a sudden drop can be specific both to the network entity being monitor),

specified information from the managed network entity, for preparing a message that includes the specified information and the specified conditions that were satisfied (Porras, column 6 , lines 23-25, intensity measures are particular suited for detecting flooding attacks, while also providing inside into other anomalies ), and for sending the message to a management point (Porras, column 6, lines 40-46, a monitor receives report from other monitors that are performing measures ).

Regarding claim 23, Porras discloses an apparatus for managing a network entity that is initiated by the network entity, comprising: means for receiving a request from a management application for interaction with the managed network entity (Porras, column 3 , lines 19-21, network services provide an interface for requests internal and external to the domain);

means for creating a management request that includes a network element identifier (Porras, column 8, lines 32-39, a resolver is handling all incoming requests by subscribers whose identities appear in the monitor );

means for storing a management request in a management proxy while awaiting a poll for the management request from the managed network entity (Porras, column 7, lines 43-45, column 3, lines 43-45, a signature engine records the occurrence of specific events; the network entity is a proxy server );

means for receiving a periodic poll message from the managed network entity, wherein the poll message requests any available management requests applicable to the managed network entity (Porras, column 6, lines 12-17, the continuous measuring of the traffic volume detects an abnormal loss in the data rate );

means for selecting one or more management requests that match the managed network entity (Porras, column 8, lines 34-39, a resolver handles requests and acts as an interface that disseminates requests );

and means for delivering the selected one or more management requests to the managed network entity (Porras, column 5, lines 15-20, based on packet sources addresses, applications are selected and implemented).



Regarding claim 24, Porras discloses an apparatus as recited in Claim 23, further comprising: means for receiving a responsive management message from the managed network entity (Porras, column 4 , lines 55-56, the resolver implements a response policy );

means for storing the responsive management message in the management proxy (Porras, column 7, lines 43-45, column 3, lines 43-45, a signature engine records the occurrence of specific events; the network entity is a proxy server );

means for receiving a second poll message from the management application, wherein the second poll message requests any responsive management messages applicable to the management application (Porras, column 7 , lines 32-36, a response from the monitor is warranted from activities standing alone or known attacks against the system);

means for selecting one or more responsive management messages that match the management application (Porras, column 5, lines 21-22, a selection implements packets targeting particular network services or applications );

and means for delivering the selected one or more responsive management messages to the management application (Porras, column 5 , lines 15-20, based on packet

sources addresses, applications are selected and implemented)..

Regarding claim 25, Porras discloses an apparatus as recited in any of Claims 22 or 23, wherein the network entity is within a private network that is managed by a network service provider, and wherein the management point is within a public network that is owned or operated by the network service provider (Porras, column 3, lines 43-46, a virtual private network using the Internet is disclosed).

Regarding claim 26, Porras discloses an apparatus as recited in any of Claims 22 or 23, wherein the network entity is a service appliance (Porras, column 3, lines 43-45, routers, firewall, and proxy servers are described as network entities).

Regarding claim 27, Porras discloses an apparatus as recited in any of Claims 22 or 23, wherein the network entity is a switch or router (Porras, column 3, lines 44-45, a router is disclosed as a network entity).

Regarding claim 28, Porras discloses a method for a network element to initiate notification to a management point about an anomalous condition, comprising the computer-implemented steps of: receiving first definitions of one or more triggers, each comprising one or more conditions (Porras, column 6 , lines 26-30, meta-measures are

described and their levels of command );

receiving second definitions of report information (Porras, column 6 , lines 35-38, event distribution measures are useful in correlative analysis performed by the monitor that receive reports );

determining that any of the triggers is satisfied, and in response thereto, initiating at the network element communication of at least some of the report information (Porras, column 6, lines 28-29, an “1s” command in an FTP session affects the directory measure ).

Regarding claim 29, Porras discloses a method as recited in Claim 28, wherein each of the conditions comprises an event, alarm, combination of events or alarms, or pattern of events or alarms (Porras, column 14 , lines 7-10, for each event stream a long-term and short-term statistical profile is generated ).

Regarding claim 30, Porras discloses a method as recited in Claim 28, wherein each of the conditions comprises a state of the network element (Porras, column 14, lines 32-35, potential intrusive activity of one of the anonymous session is statistically ameliorated by non-intrusive sessions when a packet is place in a single short-term statistical profile).

Art Unit: 2155

Regarding claim 31, Porras discloses a method as recited in Claim 28, wherein the report information describes any of the triggers that were determined as satisfied (Porras, column 13, lines 12-16, a permitting statistical analysis distinguishes a normal data transfer during a workday and an abnormal data transfer on a weekend evening).

Regarding claim 32, Porras discloses a method as recited in Claim 28, wherein the report information comprises any of a core dump from the network element, a configuration of the network element, state information for the network element, or a log of the network element (Porras, column 7, lines 51-54, a monitor encoded thresholds to monitor activities such as a failed login request).

Regarding claim 33, Porras discloses a method as recited in Claim 28, wherein the steps are performed by a server that is logically separate from the network element, wherein the server manages notifications for a plurality of network elements (Porras, column 8, lines 62-65, a service monitor in one domain monitor sensitizes service monitors in other domains to the same activity).

Regarding claim 34, Porras discloses a method for a network element to initiate notification to a management point about an anomalous condition, comprising the computer-implemented steps of: requesting a management gateway that is communicatively coupled to the network element to provide one or more application requests for the network element that have been stored at the management gateway by

Art Unit: 2155

an application (Porras, column 8, lines 32-39, column 3, lines 43-45, a resolver is handling all incoming requests by subscribers whose identities appear in the monitor; the network entity is a gateway ) ;

in response to receiving an application request, initiating at the network element a communication session between the network element and the management application for enabling the network element to reply to the application request (Porras, column 7, lines 32-36, a response from the monitor is warranted from activities standing alone or known attacks against the system).

Regarding claim 35, Porras discloses a method as recited in Claim 34, wherein the steps are performed by a server that is logically separate from the network element and communicatively coupled to the management gateway (Porras, column 3, lines 43-51, encryptions and other security mechanisms ensure the security of the network access via a gateway).

Regarding claim 36, Porras discloses a method as recited in Claim 34, further comprising the step of initiating at the network element communication of at least some of the report information that is responsive to the application request (Porras, column 4, lines 55-56, the resolver implements a response policy).

Regarding claim 37, Porras discloses a method as recited in Claim 34, wherein each of

Art Unit: 2155

the application requests comprises first definitions of one or more triggers, each comprising one or more conditions, and second definitions of report information; and further comprising the step of determining that any of the triggers is satisfied, and in response thereto, initiating at the network element communication of at least some of the report information (Porras, column 8, lines 32-39, column 3, lines 43-45, a resolver is handling all incoming requests by subscribers whose identities appear in the monitor; the network entity is a gateway ).

Regarding claim 38, Porras discloses a method as recited in Claim 37, wherein each of the conditions comprises an event, alarm, combination of events or alarms, or pattern of events or alarms (Porras, column 5, lines 4-10, selection of packets is based on packets not allowed to a gateway).

Regarding claim 39, Porras discloses a method as recited in Claim 37, wherein each of the conditions comprises a state of the network element (Porras, column 5, lines 12-14, a packet targets a port of the network).

Regarding claim 40, Porras discloses a method as recited in Claim 37, wherein the report information describes any of the triggers that were determined as satisfied (Porras, column 5, line 10, packets reach gateway).

Regarding claim 41, Porras discloses a method as recited in Claim 37, wherein the

report information comprises any of a core dump from the network element, a configuration of the network element, state information for the network element, or a log of the network element (Porras, column 5 , line, a common protocol is been used for packets in the network).

6. The prior arts made of record and not relied upon are considered pertinent to applicant's disclosure. Clark et al. (US 6,131,117) is made part of the record because of the teaching of monitoring network resources. Buyukkoc et al. (US 6,189,043 B1) is made part of the record because of the teaching of monitoring service requests. Martin (US 6,263,368 B1) is made part of the record because of the monitoring traffic network. Hogan et al. (US 6,279,038 B1) is made part of the record because of the teaching of fraud detection system. Massa et al. (US 6,658,469 B1) is made part of the record because of the teaching of observing applications. Jakobson et al. (US 6,766,368 B1) is made part of the record because of the teaching of monitoring events.

## Conclusion

7. Any inquiry concerning this communication from the examiner should be directed to **Marie Georges Henry whose telephone number is (571) 270-3226**. The examiner can normally be reached on Monday to Friday 7:30am - 4:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on (571) 272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding

Art Unit: 2155

the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marie Georges Henry/

Examiner, Art Unit 2155

/saleh najjar/

Supervisory Patent Examiner, Art Unit 2155